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Energy services at local and national level in the transition period in Hungary

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Energy services at local and national level in the transition period in Hungary

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Abstract

Energy industries are mainly organised at national level in Hungary, however local governments have their specific role in the system. Local governments have been major performers in the first period of the transition process: they were entitled to receive 25 per cent of the shares in electric utilities and 40 per cent of the shares in gas supply during the privatisation process. They did not build up long standing portfolios in these utilities. They became more important players at district heating, where they have a contradictory triple function: owner, regulator and provider of the local social safety net. Local governments are also in the forefront of the energy saving programmes.

JEL: L43, L51, L97, Q48

Keywords:

Energy industries, regulation, local governments

Országos és helyi energia-szolgáltatás Magyarországon az átalakulás időszakában

Valentiny Pál

Összefoglaló

Az országos szerveződésű energia-szolgáltatásban az önkormányzatok sajátos szerepet töltenek be Magyarországon. Az átalakulás kezdeti időszakában az önkormányzatok jelentős szereplői voltak az energia-szolgáltatásnak, mivel a privatizáció időszakában a villamosenergia szolgáltatók részvényeinek 25, a gázszolgáltatókénak 40 százalékát tartották kezükben. Ezek a részesedések nem váltak hosszútávú befektetésekké. Az önkormányzatok szerepe a távfűtés területén lett jelentősebb, ahol hármas, egymásnak ellentmondó szerepkört is be kell tölteniük: tulajdonosok, szabályozók és a helyi szociális háló fenntartói. Az önkormányzatok nemzetközi összehasonlításban is számottevő szereplői az energiatakarékossági programoknak.

JEL: L43, L51, L97, Q48

Tárgyszavak:
Energiaipar, ágazati szabályozás, önkormányzatok

SHORT HISTORY OF ENERGY SERVICES PRIOR TO 1990

From the beginning to the nationalisation

The first energy service companies have obtained concessions from local authorities in the second half of the nineteenth century. When these concessions had expired many local governments in towns and larger settlements decided to take over these facilities. In the capital city, Budapest, the electricity and gas supply (both in the form of lighting) began in the nineteenth century, and partly through merging existing firms and establishing new ones, the municipality founded its own electricity and gas companies between 1909-1918, bearing the name of the capital city. As a rule, the utilities (energy, water, sewage) owned by local governments were separate integrated companies (involving production and distribution facilities) without merging specific functions at local government level. There were few exceptions: electricity and gas supply companies were merged into one firm in a larger East-Hungarian town (Debrecen), while the billing, marketing and other consumer services of electricity and gas companies were integrated due to staffing problems in Budapest in the war period between 1943-45. The first Electricity Act came into force in 1934. It has emphasized the need of the uniform energy-management aspects in the establishment of the electric networks and transformer-switching stations, and to protect the interests of the customers.

From nationalisation to party-state

In Hungary, as in most East European countries, national electricity networks were created from local or regional utility companies during the wave of nationalisation in the late 1940s and early 1950s. Altogether 137 power plants and 147 power supply companies were nationalised in 1948 and started their closer co-operation and interconnection to synchronous operation. The electricity companies were merged into one national network company in 1949 and started their operation under the planned economy.

The prevailing party-state doctrine and the needs of "industrialisation" resulted in separation of so called "productive" and "non-productive" activities within the economy. This classification of activities could also be detected within each service. Network expansions in electricity or gas supply preferred industrial and bulk consumers, the development of transport and telecommunication services made the distinction between industrial/communal and residential/individual consumers more explicit. As a result, public utilities were relatively weak natural monopolies. Because of their low prestige, reflected in the investment allocation system, they were provided with fewer resources. Weak bargaining power among many other state monopolies, inefficient use of resources, permanent and severe shortages, and low quality of services indicated the milestones of public utilities'

development in Hungary between the 50s and 80s. The national governance structure of the gas and electricity industries, preserved up to 1990, have been established in 1957 (National Oil and Gas Trust) and in 1963 (Hungarian Electricity Board).

Tariff structures of public services, contrary to the evidences from market economies, showed - in line with the concept of "free public goods", like education or health care - the preferential treatment of households in terms of prices. Residential consumption was constantly underpriced compared to industrial consumers, cross-subsidisation of consumer groups became a permanent feature of the tariff structure of public services. Tariffs of public services in general did not reflect economic costs in Hungary. This was sustainable due to the lack of a feedback mechanism between prices and investment. Investments in public utilities were covered by the central budget through taxation without any reference to revenues raised by the utilities. This was conform to the general rules of investment: Planning Office's selection among new investments was not based on rate of return analysis but on administratively set targets.[1]

Energy consumption development has reflected the growing share of energy intensive industries. The years between 1973 and 1989 witnessed a growth of energy consumption of 1.6 per cent per year in Hungary compared with less than 1 per cent per year in developed countries. This was due to the outdated production technologies and inefficient use of energy accompanied by the policy of Eastern European states not to consider the full effects of oil price shocks.

At the same time persistent energy scarcity was one of the main characteristics of most Eastern European economies. In Hungary, imports, largely from the Soviet Union, satisfied about 50 per cent of domestic energy consumption from the middle of 70s. Despite the declining share of domestic energy production in primary energy requirements, Hungary still has limited reserves of each fuel. A significant feature of the Hungarian energy industry was that apart from the dependence upon the Soviet primary energy resources, Hungary experienced also an unusually high ratio of electricity import. During the 1970-1990 periods the net import ratio was above 25 per cent, much higher than the ratio of other Eastern European countries. The structure of energy consumption also revealed significant differences between Hungary and other European countries. The share of solid and liquid fuels was below, electricity was near to the average, while the share of gas was well above the average. This pattern has demonstrated partly the low demand for liquid fuels in transport sector, partly the effects of Soviet willingness to export gas instead of oil to Eastern Europe during the 1979-1989 period.

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[1] Cave,M., Valentiny,P.: Privatization and regulation of utilities in economies in transition in: *Privatization in Central & Eastern Europe* (ed. Saul Estrin), Longman, London, 1994

RESTRUCTURING ENERGY SERVICES IN THE TRANSITION PERIOD

Total energy demand has regained the level of 1989 in 2000. This was the result of several conflicting factors working side by side. The share of industry in total energy demand has been traditionally higher than in the OECD countries. Its observed decline - particularly in large energy intensive industries - outweighed by the growing share of households and transport sector. The economic restructuring and the concomitant improvement in energy efficiency implied that energy intensity (energy consumption per unit of GDP) has decreased[2].

Energy import dependence made energy policy a core element of policy making in Hungary. Improving energy efficiency, creating a flexible energy system were objectives of all governmental energy statements in the last two decades. Since 1989, the elimination of one-sided energy import dependency, the establishment of market conditions in energy supply, the development of new organisational and regulatory systems in line with EU countries, the curtailing of monopoly powers and limitation of state intervention became integral part of energy policy papers.

Public utilities were not early candidates for privatisation[3] in Hungary in 1989-1990. Mostly, they were considered as state-owned assets for long term where the state has and will have a role in influencing the market and services offered by these firms. However, it became clear soon, that although the development of these services is vital for the governments' modernisation strategies, governments were not in the position to finance the huge investments required. Encountering the task of financing the development of public utilities, governments began to opt for selling stakes, mainly to foreign investors.

Local governments have performed an important role in the first period of the transition process in energy industries. The Local Government Act of 1990 and the Property Transfer Act of 1991 provided the legal framework for local authorities to obtain their stakes in public utilities. Most other assets were transferred directly by the law, but in the case of public utilities the Property Transfer Committees were responsible to decide on share transfers. They found it difficult to come to a decision because of the contradictions in laws and did not fulfill this task. The local governments claimed compensation for the use of land within their authorities and for the investments made by them or by their inhabitants in constructing facilities for providing services. The transfer of rights based on the use of land was settled more easily, at the time of the privatisation of utilities' assets (1994-1995), the local

[2] Energy intensity measured in TPES/GDP decreased from 0.51 in 2003 to 0.48 in 2004, a decrease of 0.18 from 1990. *Energy Policies of IEA Countries*, 2005 Review, OECD/IEA 2005, p. 359.

[3] Privatisation means asset sales in Hungary.

governments possessed their stakes based on land use.[4] Concerning the claims based on previous investments the amendment of the Local Government Act in 1995 stated that local governments are entitled for 25 per cent of the stakes in electricity distribution companies and 40 per cent in gas distribution companies. This difference has reflected the larger amount of the contributions in constructing gas pipelines. The rules of the allocation of shares - proportional to population or to the amount of investment - were not laid down in the amendment, opening a long lasting debate and a series of legal hurdles for local governments.

Institutional changes

A modest separation of ownership, management and regulatory functions has occurred during the 1990-1994 period. The decision making process and responsibilities were more clearly defined. The parliament became responsible for formation of general energy, environmental policy objectives, for codification of laws relating the implementation of these policies. In the energy sector it is the authority of the Parliament to determine the type and site of new baseload power stations. The government as a whole is responsible for realising opportunities to diversify imports in energy industries, for decisions on privatisation and for decisions on development with national importance. The government also controls the implementation of these national policies. In all other matters the government, the Ministry of Economy and Transport, the local governments and the public utilities have joint responsibility.

The state level responsibilities on shareholdings in energy companies have changed several times. In 1990 the energy industry companies as state-owned entities were under the control of Ministry of Industry and Trade (Ipari és Kereskedelmi Minisztérium - IKM), in practice this Ministry exercised the property rights. In accordance with the 1989 Company Act and the rules of corporatisation, the major energy industry companies were reorganised into joint stock company form in 1991. The shares of these newly formed companies belonged to the privatisation agency, called from 1995 as State Privatisation and Holding Company (Állami Privatizációs és Vagyonkezelő Rt – ÁPV Rt). Based on the gas law of 1994, a regulatory body, the Hungarian Energy Office (Magyar Energia Hivatal - MEH) was established in August 1994 for both (electricity and natural gas) energy industries. The Office is subordinated to the Minister of Economy and Transport. Its decisions can be appealed to the Minister and to the courts. The MEH is accountable to the Parliament.

[4] There was one exception: the Budapest Gas Company (second largest in Hungary) was always under local control and served only the territories of the municipality, thus the local government became the owner of the whole company. In the electricity industry, the local distribution company was owned by the national firm and served much larger area than the capital city. In this case Budapest fell under the rules of the amendment of the Local Government Act 1995.

In the electricity industry the new joint stock company (Magyar Villamos Művek Rt - MVM Rt.) was established as a holding company, comprising 8 generating, 6 regional distribution companies and the transmission company. About 2 per cent of the shares were in the hands of local authorities. The remaining 98 per cent was directly or indirectly in the hand of the state. There were further changes in the company structure during 1993, some coal mines were taken over by generating companies. In the oil and gas sector the former monopoly was broken up, 12 of the 22 subsidiaries were separated from the "core" businesses. The core companies formed the Hungarian Oil and Gas Company (Magyar Olaj- és Gázipari Részvénytársaság – MOL Rt). The 5 gas distribution companies were separated as independent enterprises, the transmission system and storage facilities for natural gas remained under the control of MOL. Thus the restructuring of the energy sector, albeit based on the early sentiments of the transition period against any monopoly like structures, very well suited to the regulatory reforms of the industry afterwards.

Privatisation

In the early nineties there was no clear privatisation strategy to follow and there was no consent on priorities. Under the pressure of the growing deficit of the state budget, the government finally has decided on the timing and method of privatisation of the energy sector in December, 1994. The government intended to hold only a golden share in gas, and electricity distribution companies and in power plants except the nuclear (and largest) power plant. MVM Rt the holding company, retaining full control over the nuclear power plant and the national grid, planned to be sold by 50 per cent minus one vote, while in MOL the state ownership should have been reduced to 25 per cent plus one vote.[5]

Because of a political stalemate (even the later dismissed Minister for Industry and Trade opposed the sale of majority stakes) the final share offer was 47-49 per cent of the six electricity distribution companies, with an option to buy more shares within two years, 38-49 per cent of generating companies (except the nuclear power plant) with an option to raise capital and gain majority stakes, 24 per cent of MVM with an option to buy shares up to 25 per cent plus one vote and 50 per cent plus one vote of gas distribution companies. The Budapest municipality as the lonely owner of a gas distribution company has joined the state initiated privatisation process, offering minority stake in the company.

By the second half of 1995 the preparations gathered speed: 6 governmental, 21 ministerial decrees and 15 governmental resolutions were issued. Bids were received for all companies except two power companies with underground coal mines. All distribution

[5] Valentiny, P.: Property Rights, Corporate Governance and Company Restructuring in Hungarian Energy Industries. In: *The Redistribution of Property Rights, Corporate Governance and Company Restructuring after Privatization* (ed. Ivan Major), Research Support Scheme, 2000, 198-214.p., http://rss.archives.ceu.hu/archive/00001113/

companies (6 gas and 6 electricity) and the two biggest baseload power stations were sold in 1995. After some unsuccessful attempt for selling the remaining power stations, the ÁPV Rt decided to offer majority stakes in them. Four generating plants were sold between 1996-1998, and one remained in the hand of the state-owned MVM. The winning bidders were mainly French and German companies, but American, Austrian, Belgian, Finnish, Japanese and Italian companies were also among the winners.

Most of the firms were sold to foreign investors/trade partners. Their initial (minority) shareholdings were raised through purchasing and/or increasing the capital very quickly to the level of simple majority ownership or above 75 per cent of shares. In the case of previously unsuccessful offers, the privatisation agency decided to offer majority stakes. All but one of the remaining companies was sold under these terms. Not only were the foreign investors eager buyers of shares. The MVM Rt also raised its stake above 25 per cent in two baseload power stations (Dunamenti, Mátrai) securing board membership in the board of directors. The state retained a golden share in each privatised companies.

The local governments' portfolio of energy company shares created a buoyant market for energy stocks. The local governments were not involved at all in the privatisation process. By the time when local governments received their shares on their investment claims (25 per cent in electricity distribution and 40 per cent in gas distribution companies) the companies were already privatised. The dispersed nature of local governments' share ownership and the dire financial conditions of most local governments made the option of keeping the shares as a long term portfolio not viable. The local governments have had no experience in asset management and most of the shares received by the local governments either according to the claims of land use (allocated pre-privatisation) or of investments (allocated post-privatisation in 1997), were sold in 1998 near at face value, at give-away price. In few cases the local governments have exhibited coordinated efforts to sell the shares receiving slightly higher prices.[6] The buyers were partly the winning bidders in the privatisation process, but MOL and Gazprom, those firms that were not eligible to take part in the bidding phase, also bought significant amounts of shares.[7] The major shareholders of the Hungarian energy companies after the selling of municipalities' stakes are indicated in Tables 1-2.

[6] Állami Számvevőszék (National Audit Office): 9814 *Jelentés a helyi önkormányzatok nem közszolgáltatási célú társasági befektetésekkel, valamint értékpapírokkal történő gazdálkodásának ellenőrzéséről.* Budapest, 1998

[7] Mink, Mária: Az energiapiac újrafelosztása: Átszivárgás, *HVG,* 1997, Vol. 34. 79-81.o.

Table 1.

Ownership structure in the Hungarian Electricity Industry[8] (1999)*

Companies	Major shareholders**	Per cent
MVM Rt.	State	99.80
OVIT Rt.	MVM Rt.	92.70
DÉDÁSZ Rt.	Bayernwerk AG.+ Bayernwerk Hu. State	75.13 10.08
DÉMÁSZ Rt.	EDF International S.A.	50.00
ÉDÁSZ Rt.	EDF International S.A. Bayernwerk	27.38 27.38
ELMŰ Rt.	RWE Energie AG. EnBW AG.	50.88 25.19
ÉMÁSZ Rt.	RWE Energie AG. EnBW AG.	52.15 25.00
TITÁSZ Rt.	Isar Amperwerke AG.	74.99
Bakonyi Erőmű Rt.	Euorinvest Transelektro State	25.60 25.50 10.02
Budapesti Erőmű Rt.	IVO Holding BV Fortum Power and Heat Oy Tomen Dower TOMEN Corporation	24.99 18.84 24.99 18.84
Dunamenti Erőmű Rt.	Tractebel S. A. Tractebel Kft MVM Rt.	50.31 24.45 25.00 +1
Mátrai Erőmű Rt.	RWE Energie AG. EbnW AG. RB (Rheinbraun) MVM Rt.	71.00 25.50
Paksi Atomerőmű Rt.	MVM Rt.	99.92
Pécsi Erőmű Rt.	Mecsek Energia Kft. State	68.45 14.50
AES-Tisza Erőmű Kft.	AES Summit Generation Ltd.	95.77
Vértesi Erőmű Rt.	MVM Rt. State	42.90 37.70

* First half of the year 1999

** Minor shareholders are predominantly municipalities

[8] *A magyar energiapolitika 1999-ben*. A Gazdasági Minisztérium országgyűlési beszámolója. 1999. december

Table 2.

Ownership structure in the Hungarian gas distribution companies (1998, per cent) [9]

Company	Trade partner	Trade partner share	MOL	Municipalities	Others
DDGÁZ	WGV/RGE*	82.4	16.8	0.0	0.8
DÉGÁZ	GdF	67.5	27.2	4.8	0.5
ÉGÁZ	GdF	63.9	35.5	0.0	0.6
FŐGÁZ	WGV/RGE*	49.0	0.0	50.0	1.0
KÖGÁZ	BW/EVN	59.7	6.3	11.0	23.0
TIGÁZ	Italgas/SNAM	50.0	2.0	0.0	48.0**

* WGV became part of the RWE, RGE became part of the E.ON

**RWE 25.0 %, WGV 14.5 %

The local governments were not satisfied with the government decisions on the compensation of local contribution to the construction of gas pipelines. The initial conditions of compensation covered only the contributions made up to 1993. But the pace of the increase in gas supply was the highest in the 1992-1995 periods, namely three times; the number of the connected settlements grew from above 500 in 1992 to above 1500 in 1995.[10] The legal actions started in 1995 resulted the decision of the Constitutional Court in 1998 which contested the basis of calculations. The Parliament decided the amount of the additional compensation in 2001.[11] At that time there was no possibility to receive shares by the local governments. The method of payment was state bonds and cash. It was paid in 2003, but in some cases when local governments were late in registration for claims, there were still new legal actions.

Complying with EU regulation

The accession and joining of Hungary to the European Union framed the last decade of energy industries' development. The vertical separation of production, transmission and distribution has occurred very early in the transition period followed by a privatisation with diverse foreign ownership. There are efforts of the owners of energy companies to create a more concentrated market structure led by German companies (RWE, E.ON). We may say that in the early phase of the transition period Hungary was a forerunner in terms of vertical separation, deregulation and privatisation. Later Hungary became rather a laggard concerning price regulation, cross subsidies and competition matters due to political

[9] Aretz, Henning: *The Current Situation of the Hungarian Gas Market from the Viewpoint of a Western Investor*, paper presented at the 1st Conference Concerning the Liberalisation of the Hungarian Energy Market, Budapest, February 24-26, 1999

[10] Vojtkó, Péter: *Az önkormányzati tulajdonú gázközmű vagyon felmérése és értékelése c. jelentés műszaki szakvéleményezése*, 2000

[11] Szuly, Kinga: *The Role of Local Governments in the Hungarian Privatization process*, mimeo, 2003

stalemate and the strengthened state and private monopolies. Hungary has modified the relevant laws several times to comply with EU regulations. From 1 July 2004, every non-household electricity or gas consumer was considered to be an eligible consumer with an option to revert to regulated (public utility) market. However the effective size of the unregulated market is much smaller that it should be. All households were entitled to subsidised tariffs, irrespective of their economic conditions. This was replaced by a more leveled compensation scheme from January 2007. The current regulatory framework is still not compliant with the EU legislation. Power plants were sold with long-term power purchase agreements (LT-PPA), which guarantee a stable profit to the investors. The Hungarian Competition Office and DG COMP are putting increasing pressure on the government for a far reaching reform of the present LT-PPAs arrangements.[12] The local governments has no role in providing electricity or gas in their jurisdiction, they have no price setting authority, they are only involved in the running of the compensation schemes for those in hardship. They became more important players at district heating, where they have a contradictory triple function: owner, regulator and provider of the local social safety net[13]. Local governments are also in the forefront of the energy saving programmes as discussed below.

PRICING ISSUES

The transition process in energy industries was accompanied by a shift in energy pricing. Under the former rules underpricing mainly for households, cross-subsidisation of consumer groups, investments covered by the central budget through taxation were common practice in Hungary. Low prices - designed to meet social policy objectives - gave rise to excessive demands and resulted in low maintenance levels and obsolete capital stock. Energy tariffs in general did not reflect economic costs. Prices of coal, district heating and electricity for household consumers covered less than 30 per cent of economic costs in 1989. After several increases in electricity prices, the household tariffs covered only 2/3 of economic costs in 1992.

The first step toward a more liberalised energy pricing system was taken by enacting the law for price regulation in 1990. The formal control over petroleum product prices was removed and some key principles for energy pricing were stated. The energy price system should signal to costumers the real cost of consumption and the price levels have to ensure

[12] *A Gazdasági Versenyhivatal jelentése a magyar villamosenergia piacon lefolytatott ágazati vizsgálatról*, GVH, Budapest 2006. május, *Prospects for the internal gas and electricity market* Commission Staff Working Document, SEC(2006) 1709/2, *Energy Policies of IEA countries, Hungary* 2003 Review, IEA, 2003

[13] Vince, P.: District Heating – A Non-Privatized Utility In: *The Budapest Model, A Liberal Urban Policy Experiment* (ed. by Katalin Pallai) Budapest, OSI/LGI, 2003, 261-273.p.

the financial viability of energy companies so that they are able to cover its costs and finance new investments. In addition, the Government agreed with World Bank officials to eliminate household energy subsidies, to implement new tariff structures for gas and electricity and to raise energy prices at economic cost level by 1992. After renegotiating the conditions of loans provided by the IMF and the World Bank, the Hungarian Government approved a new deadline (end of 1996) for complete reforming of energy prices.

Although the government acknowledged that prices on 1st January, 1997 should cover justified operating costs and include an 8 per cent profit margin, further substantial price increases were felt politically unacceptable. The prices of 1st January 1997 were unacceptable for most companies. They have debated the process of adjusting allowable cost in the rate base and the calculation of rate of return. The newly privatised companies threatened litigation and the gas distribution companies brought a law suit against the Minister's decision. The controversies were settled only in late 1998, early 1999, and the government and the companies declared that prices are fully cost covering and ensure an appropriate rate of return.[14]

After 1999, the regulation of the energy prices took a turn again and the government began to increase business rates faster. From then on, rates were adjusted to the ex ante inflationary expectations. The cross subsidy between different consumers groups became again a permanent feature of price regulation in Hungary. From 2003 on an embedded system of compensation with decreasing amounts according to the consumption level was introduced to offset the price increases in certain consumer groups. The distortive nature of this system was corrected only in 2006, when the price compensation schemes were removed from energy pricing and were placed into the sphere of social protection policy. The history of energy price regulation – at least in Hungary – proves that even a theoretically flawless regulatory system was unable to filter out political influences, and that the relative complexity of the price formulae applied served only as a playground to the bargaining processes.

While energy prices in general are under governmental control, the local authorities set the prices of many other utilities (water, sewage, district heating etc.). The developments on the national level in the field of price regulation of public utilities have affected the local governments in several respects. One of them is that a number of companies are affected substantially by the prices of these companies (e.g. district heating). Another important factor is that the possible scenarios for local price regulation have evolved from national debates. An example for this was the way district heating rates were established. In its present form, this system rests on a rate-of-return price regulation, and is reviewed annually

[14] Valentiny, P.: User Charge Policy for Public Utilities In: *The Budapest Model, A Liberal Urban Policy Experiment* (ed. by Katalin Pallai) Budapest, OSI/LGI, 2003, 235-253.p.

by the local governments. Since the mid-1990s, the price regulation has been determined by price formulae that were established according to agreements with the public utilities. Using price formulae helps to reduce the contradictions between the local governments' double functions as owner and as a regulator.

At the same time, practically all these public utilities are struggling to address the issues of development and expansion. After all, it is extremely difficult to give estimates for the required reconstructions, intra-company efficiency reserves and strategically important developments. In this respect, the results concluded in the agreements between investors and local governments with partially privatized companies are more reassuring than in the case of the other companies that are fully owned by the local governments. In the latter case there is a clear conflict between the local governments' short and long-term interests. The problem of this dual commitment can be summarized as follows: the local government aims to become the owner of companies with good business prospects, while at the same time it wants to raise the public utilities' rates by the minimum required amount. The latter goal is rooted in political as well as welfare considerations. This approach often overrode the other approach that aims to heed the strategic development goals of the public utilities.

Another recurrent problem was how to improve the efficiency of the companies. Some of the price formulae include elements that account for efficiency. At those companies that were not fully owned by the local governments the dividend structure or the management contracts should guarantee the investors' interest in permanent cost cuts. These clearly promoted efficiency. However, at companies where the financial benefit of the improved efficiency has to be used for minimizing rate increases, the incentive to improve efficiency remains negligibly small. Improving efficiency can be slowed down also in the case where companies feel there is a chance to solve their economic problems through annual price bargaining and price formula modifications.

DISTRICT-HEATING

Hungary has more than 60 years of experience with district heating, due to its hot water springs. However, district heating was developed on a large scale only in the 60s, when major housing construction programmes began. Today, Hungary has 142 district heating companies which operate 240 systems in 109 towns and cities. These companies supply some 644 000 apartments, which represent 16% of the total of 3.9 million households in Hungary. Natural gas accounts for 66 per cent of the fuel used for district heating; coal and oil account for 19 per cent and 11 per cent respectively; and renewables, waste and other fuels represent 4 per cent of inputs.

About 19 of the 109 municipalities distributing heat buy this heat from independent power plants who operate combined heat and power (CHP) plants near the big cities. Those municipalities who do not buy generally produce it themselves in CHP or heat-only plants. District heating companies were heavily subsidised by the central Government (30-40% of end user prices). These subsidies were abolished in 1991. Responsibility for the municipal district heating companies, including the setting and control of end user prices, was transferred to the municipalities. Following this, some municipalities established commercial district heating companies whose goal was to make a profit. The Ministry of Economic Affairs retained the power to control heat prices set by the private generators. District heating prices increased considerably, but not in a uniform way across the country – and they still have not risen enough to fully cover cost.

At least until 1995, local district heating companies were able to benefit from subsidised residential input fuel prices, especially natural gas, whereas MVM had to pay the much higher industrial gas price for its CHP plants. This led to a situation in which the municipalities could maintain otherwise uneconomic capacity. The issue of strong regional price discrepancies and cross-subsidies led to consideration of a uniform, national regulatory framework for district heating. A District Heating Law was adopted by the Hungarian Parliament in March 1998. The new law allowed a restricted privatisation of up to 49% of the capital, maintaining ownership of the majority of the shares by the local governments. A private concession for the operation of the DH system is also allowed if 100% of the capital remains in the hands of municipalities. On the supply side various measures were taken. About 10 municipalities have signed a concession agreement for the operation of their district heating system.[15] Many local authorities supported the construction of new CHP generation facilities. On the demand side the consumption based billing was the major novelty of the law. During a 5 year transition period each building required to install metering equipment. Improving insulation and installing cost allocators were also promoted by the law. There were however some holes in the law concerning the licensing and concession procedure of district heating activity, and the common principles of price regulation. The new law on district heating in 2005 has resolved the uncertainties remained and declared the obligation of supply of district heating companies.[16]

[15] Baar, Kenneth K.: Financing and Regulating District Heating in: (eds. Kopányi, M., Wentzel, D., El Daher, Samir) *Intergovernmental Finance in Hungary, A Decade of experience, 1990*-2000, IBRD/World Bank 2004. 503-523.p.

[16] A magyar távhőszolgáltatás, *Energiapolitikai Füzetek*, VI. szám, GKI Energiakutató és Tanácsadó Kft., Budapest, 2006, 48-49.o.

ENERGY SAVING PROGRAMMES

There were institutions responsible for energy efficiency measures in Hungary even before the transition period. The lobby, which was interested in creating new generation capacities, has weakened in the area of decreasing energy consumption. Many people advocating efficiency measures took positions in the new administrations of transitory governments. As a comprehensive programme the National Energy Savings and Energy Efficiency Improvement Programme was adopted by the government in 1995 and one year later the Energy Saving Action Plan was approved stressing the importance of renewables, the energy efficiency improvement, energy efficiency labelling, awareness programmes and of technology innovation.

In the first half of 1996 the Government adopted a decision according to which preferential interest borrowing facilities have to be offered to carry out energy-efficient renewals of the buildings constructed of prefabricated components. Any residential building constructed with prefabricated technology and consisting of at least ten flats or one or several blocks of flats may be the object of an application when the energy resource used is inefficient and the renovation is expected to result in energy saving. A credit may also be used for any other residential building or blocks of such buildings for which the renovation results in energy saving. The state support is designed to help pay the interests on the loans provided by financial institutions for the implementation of energy efficiency projects, in case the residential building should not meet the heat-engineering standard. These financial schemes were organised by the local authorities.

Hungary adopted a very strict mandatory insulation standard and building codes, comparable to the strictest standards in the EU in 1992, but the enforcement rules and quality control have approved only in 2006 introducing a building's certification system. To comply with the EU regulations, five ministerial decrees regulated the energy labelling of household electric refrigerators, freezers, washing machines and dryers, household dish washers and lamps, efficiency and carbon-dioxide emission requirements for newly distributed cars.

There was growing number of energy saving activities based on foreign financial aid and support programmes. The earliest, the energy saving programme German Coal Aid Revolving Fund (GCARF) came into force on 1 August 1991 relying on a German coal support facility. The original target was to provide finance to the private sector to support energy efficiency investments and at the same time reduce environmental pollution. Its scope has been expanded to municipalities, enterprises and institutions they own. The PHARE Revolving Fund (PRF) established as a soft-loan credit facility to support the energy efficiency investments by medium-sized and small enterprises from the private sector and by

municipal-owned companies and institutions. In March 1995, the governments of Hungary and the Netherlands expressed their wish to realise jointly a series of AIJ (Activities Implemented Jointly) projects. One of the projects involved energy conservation in local municipalities. Another programme, funded by UNDP, the Global Environment Facility (GEF) aimed at improving the country's energy efficiency in the public sector, removing barriers to energy efficiency in municipal buildings (including schools, hospitals and other public buildings).[17]

Many energy saving actions run under different titles since 2000. The number of supported activities between 2000 and 2004 were 21838 (residential 20184). The amount of grants was HUF 12bn, preferential loans HUF 1.5bn, total cost of investments HUF 47.5bn and energy cost savings per year were HUF 5bn (see Table 3.).

Table 3.

Results of Energy saving programmes between 2000-2004[18]

Programme	Number of approved application	Grant approved mFt	Credit opened mFt	Investment costs mFT	Energy saving TJ/year	Energy cost saving mFt
Residential	20184	6384.4	0	23181.8	762.1	832.5
Institutions of local governments	309	1083.7	803.8	5066.2	527.4	729.2
Public lighting	152	502.2	0	1679.9	133.7	344.8
District heating	193	2175.0	696.2	9151.4	1719.2	2031.8
Renewable	768	857.4	0	4333.5	578.2	478.1
Awareness	26	72.5	0	112.3	0	0
Energy audits	93	229.9	5.8	419	0	0
Transport	11	34.7	0	51.8	0	0
SME	59	265.2	0	985.6	165.8	183.7
Third party finance	43	466.8	0	2605.2	271.8	499.3
Total	21838	12071.8	1505.8	47586.7	4158.2	5099.4

The bulk of these actions (under the heading of residential, institution of local authorities, public lighting, and district heating) were arranged by the local governments. This covered more than 80 per cent of the total investment costs. The administration of the savings and efficiency improvement action plans belongs to the intragovernmental Energy Centre. The

[17] *Energy efficiency update, Hungary*, IEA, June 2003
[18] Szerdahelyi, Gy. et al.: *Energiatakarékosság a magyar energiapolitikában*, Budapest, 2005, 74.p.

agency contributes to the policy formulation through targeted information and helps governmental bodies in the selection of instruments, allocation of resources and refining of programmes. It also manages the implementation of international energy efficiency projects using multilateral or European funding. The agency is responsible for operating Hungary's energy data system.

Partly based on the new saving programmes partly relied on the tradition of energy efficiency improvements, the local authorities have an excellent history of successful cooperation with energy service companies (ESCOs).[19] According to estimates there are about 100 ESCO companies which are not involved in direct financing and about 20 companies acting as borrowers.[20] Many municipal institutions have signed a contract with an ESCO who holds the equipment and the municipality pays a service fee to the ESCO at the end of the contract. This way the energy costs should be kept constant. As the assessment of the municipal energy efficiency projects has evaluated, most of these efforts can be enormously cost-effective, particularly fuel switching projects.[21]

CONCLUSIONS

Energy industries are mainly organised at national level in Hungary, however local governments have their specific role in the system. The municipalities have played changing role in providing energy services. Companies receiving concessions from local authorities were the early suppliers of electricity and gas products. These companies were taken over by local authorities in many cities and towns forming local distribution companies. In most East European countries, national electricity networks were created from these local or regional utility companies during the wave of nationalisation in the late 1940s and early 1950s. Local governments became major performers again in the first period of the transition process: they were entitled to receive 25 per cent of the shares in electric utilities and 40 per cent of the shares in gas supply during the privatisation process. They did not build up long standing portfolios in these utilities. The dispersed nature of local governments' share ownership and the dire financial conditions of most local governments made the option of keeping the shares not viable. Local governments became more important players at district heating, where they have a contradictory triple function: owner, regulator and provider of the local social safety net. They are also in the forefront of the energy saving programmes.

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[19] Rezessy, S., Dimitrov, K., Urge-Vorsatz, D., Baruch, S.: Municipalities and energy efficieny in countries in transition. *Energy Policy* 34 (2006) 223-237.p.

[20] *Third Party Financing and Energy Municipal Utility Restructuring*, Prepared by EGI Contracting/Engineering under the assignment of the MUNEE Programme of USAID and The Alliance to Save Energy, Budapest, December 2002, 2.p.

[21] *HUNGARY - Municipal Energy Efficiency Projects*, http://www.munee.org/go.idecs?i=49&p=1

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